# Operation Manual

Americo™

non-contact infrared **Thermometer**

TEMPERATURE | INSTANT | ACCURATE

NC-9900

tia
Temperature Instant Accurate Thermometer
non-contact infrared Thermometer
TEMPERATURE | INSTANT | ACCURATE
Americo
Messuring:5cm-15cm(2in-5.9in)
Sample Rate: 0.5s
FUTURE
NC-9900
PAST

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## I. SAFETY PRECAUTaIONS

- Maintain thermometer as outlined in this guide
- Device is for personal home use
- Use device ONLY for purposes described
- Must be used in environments with temperatures between 50°F - 104°F (10°C - 40°C)
- Keep your tia thermometer in a clean dry area
- Protect device from electric shock
- Do not expose thermometer to temperatures below -4°F (-20°C) or above 122°F (50°C)
- Do not use thermometer if relative humidity is greater than 85%
- Always protect glass over the lens (this is the most fragile part of your tia thermometer)
- Do not touch glass of infrared lens with fingers or objects
- Glass may be cleaned with a cotton swab moistened with rubbing alcohol
- Keep your tia out of sunlight and out of water
- Thermometer may not be used outside
- Do not drop
- Should a problem occur, please contact the store where you purchased your tia
- Do not attempt to repair device yourself

## IMPORTANT SAFEGUARDS

- Do not dismantle
- MANUFACTURER RESERVES THE RIGHT TO ALTER SPECIFICATIONS WITHOUT PRIOR NOTIFICATION

## II. INTRODUCTION

The tia NC-9900 no contact thermometer has been developed with the latest infrared technology which allows temporal artery (TA) temperature to be taken at a distance of approximately 2 – 6in (5-15cm) from the forehead.

Precise, instantaneous and without contact, the tia NC-9900 is the most suitable thermometer for no risk temperature measurement. Studies show that TA temperature measurement is more precise than tympanic (ear) thermometry and far more comfortable and better tolerated than rectal thermometry. (*Ref:* Greenes D, Fleisher G. Accuracy of a Noninvasive Temporal Artery Thermometer for Use in Infants. Arch Pediatr Adolesc Med 2001;155:376.)

As with all thermometers, the tia NC-9900 must be used properly in order to obtain reliable and consistent results.

**Read ALL instructions and safety precautions prior to use.**

## III. PRIOR TO USE

- tia NC-9900 is pre-set at the factory
- No need to calibrate
- When changing environments of varying temperatures, allow your tia to reach room temperature (about 15 – 20 minutes) before using
- Always wait at least 15 seconds (one minute is recommended) between measurements

## PRACTICAL CONSIDERATIONS WHEN TAKING A TEMPERATURE

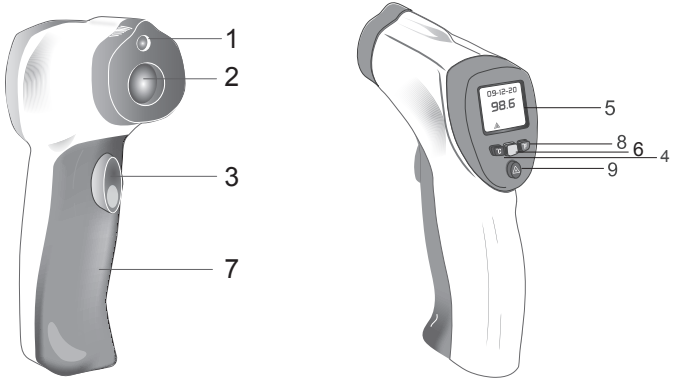
- In order to ensure that accurate & consistent temperature measurements are obtained, it is essential that each user become familiar with correct operation of the tia NC-9900
- Keep in mind that taking someone's temperature is simple, yet important
- Temperature should be taken under normal conditions. For instance, taking a temperature after vigorous exercise is not recommended
- Room temperature should be moderate
- Be mindful of normal temperature variations

- Temperature increases by 0.9°F (0.5°C) between 6AM and 3PM
- On average a woman's temperature is higher by about 0.4°F (0.2°C) and by 0.9°F (0.5°C) during the second half of her ovarian cycle and during early pregnancy.
- When sitting, temperature is lower by 0.5° F – 0.8°F (0.3°C - 0.4°C) than when standing

**NORMAL TEMPERATURES ACCORDING TO AGE**

| | | |
|---|---|---|
| 0 - 2 years: | 97.5°F - 100.4°F | (36.4°C - 38.0°C) |
| 3 - 10 years: | 97.0°F - 100.0°F | (36.1°C - 37.8°C) |
| 11 - 65 years: | 96.6°F - 99.7°F | (35.9°C - 37.6°C) |
| > 65 years: | 96.4°F - 99.5°F | (35.8°C - 37.5°C) |

## IV. DESCRIPTION OF tia NC-9900




1. Laser pointer lens
2. Infrared Sensor
3. Trigger
4. Battery compartment cover
5. Backlit LCD display
6. Fahrenheit
7. Memory
8. Celsius
9. Laser & backlight on/off

## V. USING YOUR tia

- Install battery
  - Pull out gently but firmly on battery compartment cover on front of unit near trigger (Note that the cover remains attached by a hinge at the base of the handgrip.
  - Attach standard 9V battery to connectors as shown inside the compartment
  - Nest battery inside the compartment
  - Close compartment
- Before first use or after changing the battery, wait 5-10 minutes for the device to warm up
- Push back hair from the forehead
- Wipe away any perspiration
- Avoid drafts (e.g. vents, another person's breath, etc.)
- If a temperature change of the environment occurs, allow your tia NC-9900 to reach current room temperature (about 15 – 20 minutes) before using
- Aim toward the forehead from 2 - 6 inches (5 -15cm) away.
- Press the trigger button and temperature is displayed in half a second.
- Note: temperature may also be taken from behind the earlobe.
- Allow at least 15 seconds (1 minute is recommended) between measurements

## VI. SETTINGS

*** During any setting functions, if your unit times out and goes back to its resting state, simply press the trigger and begin again.**

### 1. Choosing Celsius or Fahrenheit as your Unit of Measure

- Press trigger to activate unit
- Select degrees Celsius by pressing the "°C" button, or degrees Fahrenheit by pressing the "°F" button
- Wait several seconds
- Press trigger again to confirm selection and exit

**2. Fever 3-Beep Alarm Threshold Setup – F1 MENU**

- **Default value indicating fever is 100.5°F (38°C)**
- To change default values press trigger to activate unit
  - Press "°C" button and hold for approximately 3 seconds until screen displays F1
  - Press "M" button to display temperature at which alarm will sound
  - Press "°C" button to increase threshold by 0.2°F (0.1°C)
  - Press "°F" button to decrease threshold by 0.2°F (0.1°C)
  - Press trigger to exit

**3. Variation – F2 MENU**

**To adjust the total variation of your tia NC-9900**

- Press trigger to activate unit
- Press "°C" button for approximately 3 seconds until screen displays F1
- Press "°F" button twice until screen shows F2
- Press "M" button to display current setting
- Press "°C" button to increase threshold by 0.2°F (0.1°C)
- Press "°F" button to decrease threshold by 0.2°F (0.1°C)
- Confirm by pressing trigger
- Press trigger to exit
- **Note: Default value is +1.2°F (+0.8°C)** *(Manufacturer recommends that you keep this setting)*
- **Important Reminder:** Whenever there is a significant change in ambient (room) temperature, please allow the tia NC-9900 approximately 15 minutes to become accustomed to this change

**4. Changing from Body to Surface Temperature Mode – F3 MENU**

- Your tia NC-9900 arrives ready to measure the body temperature of a human being and is thus set in BODY mode
- Measurement range for BODY mode 90°F - 109°F (32°C - 42.9°C)
- You can also use your tia NC-9900 to measure the temperature of an area or an object, a food, a liquid or a room temperature by changing to SURFACE mode

- Measurement range for SURFACE mode is 32°F -140°F (0°C - 60°C)
- **Important Note:** *Area temperature differs from internal body temperature. To obtain the internal temperature of a person to determine whether or not fever is present it is essen*tia*l that your* tia *NC-9900 is set to BODY mode.*
- To change from BODY to SURFACE mode
    - Press trigger to activate unit
    - Press and hold "°C" button for approximately 3 seconds until screen displays F1
    - Press "°F" button once to display F3
    - Press "M" button to view current setting
    - Press "°F" button to change from BODY to SURFACE (or vice versa)
    - Press "M" button to select desired choice of mode
    - Press trigger to exit

**5. Laser and Backlight controls**

- Press trigger to activate unit
- If laser beam is off, press Δ button once to turn back light on only
- Press Δ button again to also activate laser
- If laser beam and light are set to on, after trigger is pressed to activate unit
- Press Δ button once to turn off back light (but leave laser activated)
- Press Δ button again to turn laser off as well
- Press trigger to exit

**6. Date setting**

- Press trigger to activate unit
- Press and hold Δ button for approximately 3 seconds to display year
- Press "°C" button to advance one year
- Press "°F" button to go back one year
- Press Δ button to change to month
- Press "°C" button to advance one month
- Press "°F" button to go back one month
- Press Δ button to change to day
- Press "°C" button to advance one day
- Press "°F" button to go back one day
- Press trigger to accept changes and exit

**7. Data Memory**

- Press trigger to activate unit
- Press "M" button and then "°C" button to display the most recent
- Press "M" button and then "°C" button to display the next most recent
- Press "M" button and then "°C" button to display the third most recent
- Continue to press "M" button and then "°C" button to view up to the 32 previous readings
- **Note: Display shows a count up from 1 to 32 in between temperature displays; To view a count down from the 32nd reading down to the most recent follow the same procedure as above, but press the "°F" button instead of the "°C" button**
- To clear memory press and hold "M" button for approximately 3 seconds
- Press trigger to exit

**7. Whenever you are in a setting mode you may exit by pressing the trigger**

**8. Battery changing**

When the LCD screen displays ' ' your battery is depleted and needs to be replaced

To replace battery

- Pull out gently but firmly on battery compartment cover on front of unit near trigger (Note that the over remains attached by a hinge at the base of the handgrip)
- Remove the spent battery from the connectors and discard appropriately
- Attach replacement standard 9-volt battery to connectors as shown

inside the compartment
    - Nest battery inside the compartment
    - Close compartment
- Take care with proper positioning of battery
- Incorrect battery attachment may void warranty of your tia NC-9900
- Always use regular single-use batteries
- Never use rechargeable batteries in the tia NC-9900

## VII. FUNCTIONS

- Specially designed to take the body temperature of a person regardless of the room temperature
- Quick, reliable results as it uses the HEIMMANN infrared detection system
- Unique beep if temperature is exceeded
- Stores 32 previous measurements
- LCD back-lit digital screen
- Data displayed in either Celsius or Fahrenheit
- Energy saving automatic shutoff
- Small, convenient, easy to use

ADDITIONAL USES:
tia NC-9900 can also be used to measure the temperature of a baby-bottle, bath, or room temperature (by using the surface temperature function). This function is in accordance with the directive 89/336/EEC Electromagnetic Compatibility.

**ADVANTAGES OF TEMPORAL ARTERY (TA) TEMPERATURE**
Infrared arterial temperature can be measured using a device placed near the forehead, in the temporal artery region. It has been demonstrated that this relatively new method of measuring temperature is more precise than tympanic thermometry and better tolerated than rectal thermometry. The temporal artery is close to the skin's surface and maintains a constant, regular blood flow. It is one of the main arteries in the body linked to the aorta via the carotid artery.

tia NC-9900 thermometer has been designed to produce an instant forehead temperature reading without any contact to the body. The efficiency, speed and comfort of taking a temperature in this way make it ideal.

## VIII. SPECIFICATIONS

- Normal operating conditions
  - 50°F - 140°F (10°C - 40°C)
  - Humidity ≤ 80%
- Power: 1 DC 9V battery
- Size L: 6.3" x W 3.94" x H1.57" (160mm x 100mm x 40mm)
- Weight: 5.5oz (156g) with battery; 3.9oz (110.5g) without battery
- Display: 0.2°F (0.1°C)
- Range:
  - Body Mode: 90°F - 109°F (32°C - 42.9°C)
  - Surface Mode: 32°F - 140°F (0°C - 39°C)
- Precision +/-0.2°C/F between 96.8°F and 102.2°F (36°C and 39°C)
- Energy consumption: ≤ 50mW
- Accuracy: ±0.54°F (0.3°C)
- Measuring distance: 2" - 6" (5cm - 15cm)
- Automatic shutoff at 8 seconds
- Relative precision according to ASTM Standard E1965-1998 (2003):
  - ± 0.3°C from 34°C to 35.9°C
  - ± 0.3°F from 93.2°F to 96.6°F
  - ± 0.2°C from 36°C to 39°C
  - ± 0.2°F from 96.8°F to 102.2°F
  - ± 0.3°C from 39°C to 42.5°C

- ± 0.3°F from 102.2°F to 108.5°F
- The tia NC-9900 can measure temperatures below 90°F (32°C( and above 109°F (42.9°C), but precision is not guaranteed outside this range
- Longevity: your tia NC-9900 is guaranteed for 40,000 reading

## IX. WHAT'S INCLUDED

- User's manual
- Warranty registration card
- Protective carrying bag
- One 9-volt battery
- Your tia NC-9900

## X. TROUBLESHOOTING

Should a problem occur with your tia NC-9900, follow the guidelines below to help resolve the issue. If problem persists, please contact our customer service department at cs@americocorp.com

- **Display shows temperature greater than 95°F**
  - Temperature is in Fahrenheit
  - Change measurement to Celsius
    - Press trigger to activate unit
    - Press "°C" button to change from Fahrenheit to Celsius

- **Display shows body temperature less than 89.6°F (32°C)**
  - Thermometer is in SURFACE mode giving you a reading of external surface temperature
  - To take internal body temperature, change to BODY mode by:
  - Press trigger to activate unit
  - Press and hold "°C" button for approximately 3 seconds until F1 is displayed
  - Press "°F" button once to show F3
  - Press "M" button to display current setting
  - Press "°F" button to change from SURFACE to BODY (or vice versa)
  - Press "M" button to select mode
  - Press trigger to exit

- Display shows “HI”
- Indicates that temperature reading is above the normal measurement range
  - Above 109°F (42.9°C) in BODY mode
  - Above 140°F (60°C) in SURFACE mode

- **Display shows “LO”**
  - Indicates that temperature reading is below the normal measurement range
    - Below 90°F (32°C) in BODY mode
    - Below 32°F (0°C) in SURFACE mode
  - Other reasons for display to show “LO”
    - Temperature reading is impeded by the presence of hair (please brush away before measuring temperature)
    - Temperature reading is impeded by the presence of perspiration (please wipe away before measuring temperature)
    - Temperature reading is skewed by the presence of air flow (please use thermometer away from drafts)
    - Measurements are taken too rapidly (please wait at least 15 seconds between measurements, though a 1 minute interval is recommended)
    - Measuring distance is too far (please keep device 2 – 6 inches or 5 – 15cm from body/surface)

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